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JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA

MAY

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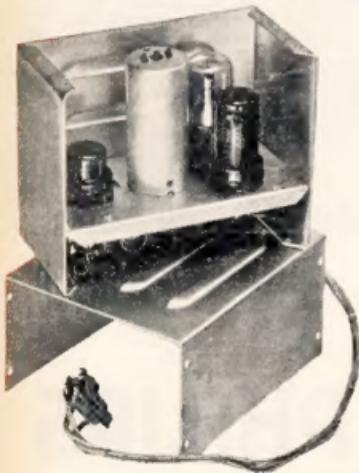


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**— IN THIS ISSUE —**

Series Phased Aerial Arrays	3
BC696 and BC457 Transmitters	6
Are You Guilty?	9
New Equipment	11
Fifty and Up	12
Federal, QSL and Divisional Notes	14
Correspondence	24

# AMATEUR RADIO

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## EDITORIAL



In this month's Federal Notes you will find a brief resume of the activities at the Federal Convention where the few did so much for so many. Whether the many will approve of the work performed by the few remains to be seen.

One of the major tasks allotted to Federal Executive for the forthcoming year is that of preparing a "Uniform Divisional Constitution." This is going to be a gigantic task as it is necessary to take into consideration both the wide variations in Companies Act in each State, and the diversity of existing Divisional Constitutions. One thing stands out very clearly, before a uniform divisional constitution can be agreed upon each and every division will have to make generous concessions.

Unfortunately we are living in a world filled with suspicion and motivated by selfishness; hence we are all biased by our environment and find it difficult to believe that the other fellow is actuated by honest motives.

It is obvious that before true Federation can exist members will have to delegate sufficient discretionary powers to Divisional Councillors, Federal Councillors and Federal Executive to make any scheme workable.

The present basis under which executives of the Institute are fettered and hampered by the cumbersome process of securing

approval step by step from members generally is both unsound and unworkable. It is not suggested for one moment that you as a member give anyone a blank cheque; but rather that everything be viewed in its correct perspective. If you have sufficient faith in your own judgement in electing the right men, then surely you can trust those men to perform the task faithfully during their term of office.

The other stumbling block which must be removed to make way for Federation is "Interstate Jealousy." The continual fear by one State that another will encroach upon its precious preserves. This outlook reeks of medieval times when Barons were wicked old gentlemen who lived in castles surrounded by watery moats, and does not in any way fit in with the radio picture wherein is envisaged, upon a broad canvas, the complete elimination of boundaries, prejudices and racial differences, based upon the better understanding promoted by the penetration of the common interests of Hamdom into the far corners of the earth.

The moral of this story is — can we rise far enough above our present environment and past prejudices to make FEDERATION a concrete fact instead of an idealistic dream. The ball is in your corner!

G.G.

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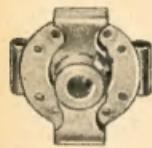


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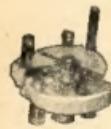
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# SERIES PHASED AERIAL ARRAYS

By H. K. LOVE\*, VK3KU

So much has been written on the subject of Directive Arrays, that one hesitates to step into this field unless it is to offer a summary of experience which may clear up some of the confusion which exists. An examination of the published data on Parasitic Arrays, for example, shows a great variety of claims for gain above a dipole. Some of these claims are fantastic, and some conservative.

The important feature from the Amateur's point of view is that all types of Parasitic Beams work in some fashion. It is feared that some of the information on this type of beam has its genesis in unbounded enthusiasm, brought about by the fact that the author has been fortunate; his location and all the other factors have been favourable, and his results excellent. We all fall into this trap at some time or another—it is the "Ham" in us! \*

It is no wonder, then, that when results are not as good as we expect, some of us are disappointed. The reason can, as a rule, be traced down to some unfavourable factors which were not present in the enthusiastic author's case.

There are a number of factors which govern the operation of Parasitic Arrays—some of them are as follows:—

- (a) Location.
- (b) Height above ground.
- (c) Nature and proximity of surrounding objects.
- (d) The ability to accurately tune the array.
- (e) The method of feeding.

Some very interesting and accurate engineering data on the subject of Parasitic Arrays is found in the Radio Engineer's Handbook (Terman) beginning on page 809, para. 17.

In the main, this paragraph deals with a simple driven element, and a Director or Reflector. Examination of the figures on page 810 will reveal just how slight changes in tuning or spacing will affect the pattern.

After reading this data the Amateur will begin to look around his location and count the tin roofs and other obstructions in an endeavour to learn what chance he has of getting out in the right direction, if the antenna is pointing in that direction.

All this wordy preamble is to indicate that what the other fellow has done with a 2, 3 or 4 element beam of the parasitic variety, cannot always be repeated in another location. One may still persist and do a very nice job on such an array, but there is always the feeling that with a little more tuning and adjustment, better results might be obtained. One cannot help wondering if those non-driven elements are doing their stuff!

Keeping the series idea in mind as the first fundamental, let us add some other desirable features as under:—

- (a) Compactness.
- (b) Flatness of tuning on the Ham bands.
- (c) No critical tuning.
- (d) Substantial gain.
- (e) No adjustment, and easy to feed.
- (f) Correct phasing to achieve directivity.
- (g) All elements in series, and therefore all excited.

These features—(a) to (g)—are the story of the Series Phased Beam as applied to Amateur practice.

The following quotation, extracted from Messrs. Ladner & Stoner's "Short Wave Wireless Communication" will start one thinking on this type of array:

## THE MARCONI FRANKLIN SERIES PHASED ARRAY†

Such is the full name of the beam about to be described. If one took a huge loop of wire, say a wave length or so long, set it out in a circle and fed both ends from the transmitter tank, provided it was resonant and drew current, there would be little fear in the mind of the operator that the r.f. was not in all parts of the wire, because the whole loop is in series.

It is not, however, convenient to mount and erect such a contraption, but the series characteristic can be retained by another method.

†"Short Wave Wireless Communication" by Ladner & Stoner.

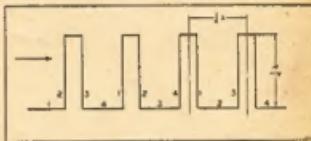
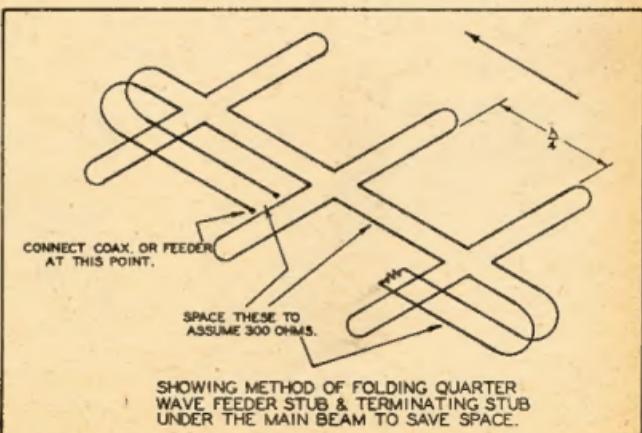


Figure 132

dimensions of the loops and the spacing being dependent upon the type of diagram required. In general, the most commonly adopted arrays are made with loops approximately one-quarter wave-



\*Virginia Street, Mt. Waverley, Victoria.

length long spaced a similar amount, the length of the array line being dependent upon the directivity desired. An array line will be fed from one end, usually through a short length of non-radiating feeder coupled to a normal concentric tube main feeder, the remote end of the array generally being terminated by a resistance equal to the characteristic resistance of the system, which approximates to 300 ohms.

As will be seen later, the loops perform two separate functions; to act as radiators, and what is as important, to determine the time phase of current between loops.

Consider an earthed vertical single wire aerial. When excited from the base, a stationary wave is formed, by a wave  $W_1$  travelling up the wire, and a similar reflected wave  $W_2$  travelling back. We could imagine wave  $W_1$  travelling up the left hand edge of the wire, and the same travelling wave returning down the right hand edge of the wire, and because at all intervals of time the instantaneous values of the current waves  $I_1$  and  $I_2$  at the top are equal but opposite in direction, they form a node of current here.

At other points down the wire the instantaneous amplitudes of  $I_1$  and  $I_2$  are not always equal, and if their values are traced out in time they will be found to form a stationary wave with current antinode at the base when the wire is one-quarter wave length long. However short or long this wire may be, a stationary wave will be formed by these two travelling waves with a node of current at the top end and current value at the bottom appropriate to the length of wire. Accompanying the current stationary wave is a voltage wave in quadrature time phase with it and with an antinode at the top end.

If instead of providing a single wire we provide a loop of wire, Fig. 133, fed at the lower end, 'A', say, this loop being part of a circuit in which a travelling wave is flowing, the wave will now travel up one wire 'AB' and return by the second 'BC' from which it continues on in the circuit, but provided these wires are sufficiently close together to be regarded as coincident in space from a radiation point of view, the loop may

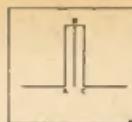


Figure 133

be regarded exactly as a single wire carrying a stationary wave with current node at 'B'. These two travelling waves not only form a stationary wave of current with node at top end and (if the loop is  $\frac{1}{4}\lambda$  or at the bottom end) an antinode but in quadrature time-phase with the effective current stationary wave there will be a voltage stationary wave, having an antinode at the top end and a node at the bottom end. The voltage does not reverse in sense at the top, and in consequence, no node is produced, whilst at the bottom of the loop the voltages are always equal but opposite in phase.

The radiation resistance of the loop will be four times the radiation resistance of a single wire for the same base current measurement in each case. This is so because a meter placed at the base of one limb of the loop is measuring current in one limb only, and this is half the effective stationary wave current at the base, as the currents add to this point. This means virtually that the effective height, and in consequence the radiation efficiency of this portion of such a system is high. For this reason, an array built with loop radiators is equally suitable both for transmission and for reception purposes.

Messrs. Ladner & Stoner deal, in the main, with the "Series Phase" as a commercial curtain, and cover the maths. and theory considerations fully. It is the purpose of this article to summarize the application of this system to Amateur use. At VK3KU the beams for 28, 50 and 144 Mc. are all series phase, and at 28 and 50 Mc. have done a wonderful job. It should be remembered that no tuning or adjustment has been done on these beams—they simply work!

It will be seen that Fig. 132, ex Ladner & Stoner, forms the basis of construction of Fig. 1—the Amateur application for 28 Mc.

The beam construction for Amateur use is two beams mounted horizontally—see Fig. 1.

Above: Complete Series Phased Three Element Beam for 144 Mc. showing Stubs turned under.

At left: Terminating Stub on 144 Mc. Series Phased Beam.

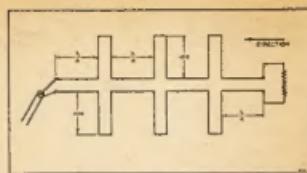


Figure 1

As the loops on each side of the beam represent a  $\frac{1}{4}$  wave out and  $\frac{1}{4}$  wave back, each loop is  $\frac{1}{4}$  wave length, and this, added to the corresponding loop on the opposite side, makes each element a folded full wave. Since all loops are in series, each is excited.

The loops, therefore, perform two separate functions: to act as radiators, and what is quite as important, to determine the time phase of current between loops.

A further extract from Ladner & Stoner will make this clear—

• Consider Fig. 134 (a), which shows two radiators 1 and 2 spaced one quarter wave length apart and connected by a feeder line. If this system is fed from a point 'A', half-way between the aerials, zero time phase is supplied to both aerials, but if we move the feed point to 'B', this automatically creates a time phase difference between 1 and

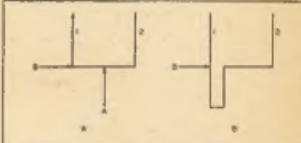
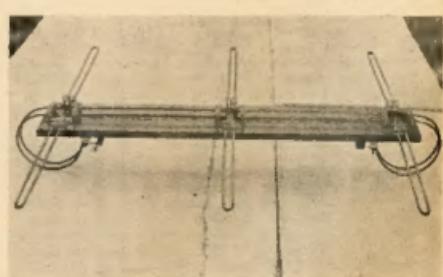
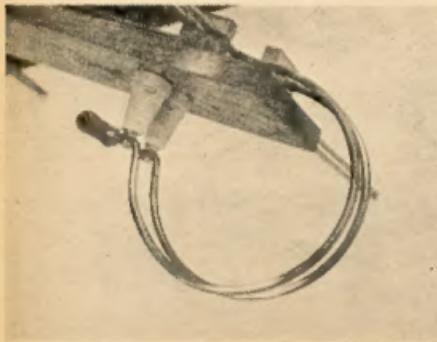


Figure 134

2, equal to the space phase between them, assuming the radiated wave travels to the right at the same velocity as the wave along the feeder. In this case maximum directivity is away from the feed point 'B'.

"Still keeping the feed input at 'B', we can reverse the diagram by looping the feeder to give aerial 2 a lagging



current of  $90^\circ$ . To do this the feeder length can be increased as shown in Fig. 134 (b), such that it equals  $(360^\circ - 90^\circ) \times \frac{1}{4}\lambda$ . If we design the loop to have  $\frac{1}{4}\lambda$  sides as shown, this loop, together with the straight portion of  $\frac{1}{4}\lambda$ , makes up the  $\frac{1}{4}\lambda$ , and as we have seen, if the sides of the loop are coincident in space, the loop itself will act as a radiator; in consequence, we can use it not only as a phasing feeder to aerial No. 2, but to replace aerial 1. In a similar way the whole line of radiators can be replaced by loops, whose lengths are made correct to produce the required phasing between the radiating elements. This is the usual series-phase array design which therefore has maximum directivity from its feed end, and it is clear that with this particular spacing we could not reduce the dimensions of the loops sufficiently to reverse the diagram, i.e., by producing a time phase equal to the space phase as the loops would then have zero dimensions.

"But we can obtain this reversal by increasing the loop still more, namely to  $\frac{1}{2}\lambda$ , as in this case the total feed length is then  $\frac{1}{2}\lambda$ , and this gives the required time phase."

It is not intended, here, to go further into the theory of this type of array, as Messrs. Ladner & Stoner have treated this at great length. It is therefore intended to give some pointers on the construction of a Series Phased Array for the practical Amateur bands.

The beam is practicable on the 14, 21, 28, 50 and 144 Mc. bands. The dimensions are easy to compute by any formula for  $\lambda$  wavelength. It has been found that the beam is very suitable to work over quite wide areas of the bands, with little loss of efficiency, and on this account the intending user is advised to cut the  $\lambda$  wave sections for a frequency at the centre of his operating frequencies. The  $\lambda$  wave stubs for feeding and termination can be folded back under the framework of the beam, and accordingly do not add to the length of the structure. The  $\lambda$  wave feeder is made up of open line, with spacing and conductor diameter to make a 300 ohm line. This can be done with tubing or wire, provided the spacing is suitably adjusted to 300 ohms.

The loops or elements are best made of  $\frac{1}{2}$  inch tubing, or can be wires folded back round insulators if desired.

It will be seen that for 14 Mc. a two element beam is not by any means too big. Such a two element affair will have

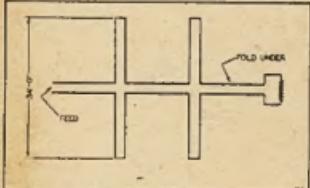


Figure 2  
four driven  $\frac{1}{4}$  waves and will occupy approx.  $3\frac{1}{2} \times 17\frac{1}{2}$ " (Fig. 2). A three element beam for 28 Mc. (6 half waves) will take a space of about  $17\frac{1}{2} \times 16\frac{1}{2}$ ".

The method of mounting the elements on a wooden frame, whether it be a tubing structure or wire, is left to the intending user.

The spacing between centres of the folded back tubes or wire should be quite close; in the case of tube, a space not in excess of  $\frac{1}{2}$ " between the adjacent walls will be about right. If wire is used, a space of approx.  $\frac{1}{2}$ " between centres of the wire will do well—but care should be exercised when the construction is designed that the wires are held apart and do not touch in a high wind. Liberal use of insulators or small spreaders should serve well to achieve this.

**The Termination.**—The beam may be left bi-directional if desired, or made uni-directional by a terminating resistor of 300 ohms of a non-inductive type.

**The Beam In Use.**—The feeder can be almost any type of line—open or co-ax,—and the feeder stub, which is 300 ohms  $\frac{1}{4}$  wave, will take care of the matching to the array in much the same manner as Q bars. Should 300 ohm line or cable be available, this may be used right down to the transmitter tank.

Results obtained with this beam indicate that it does a first-class job. There are numbers of beams—the description of which, together with the theory and data, would tempt some of us to endeavour to use them, but unless one has the facilities to ensure perfection of the theory, it may be better to leave them alone.

When all is said and done, most of us are after R5 reports, and we also like something round the S9. With the limited power the Australians use, the S section of our reports must come from getting as much of the r.f. from the tank into the flat top as possible.

The improvement of our signal strength from, say, S6 by power increase

can be expressed in the following terms: To raise an S6 signal to S6.5 requires that we multiply the power by two. To increase our signal by one S unit, i.e., 6 db. to S7, the power would need to be multiplied by four. One can go on doing sums like this to see how many times the power must be increased to gain the additional signal points, but it is the power that reaches the flat top which does the job.

If equipment is arranged with 100 watts input to give 60 watts output in the tank, all well and good, but if only 15 of the watts reach the radiator, we are not getting very far. What we all desire is the use of as much of that 60 watts as possible in the radiator—pushed in the desired direction—that is the receiving station.

#### TIPS FOR PRACTICAL CONSTRUCTION

It is strongly recommended that the beam be fabricated of  $\frac{1}{2}$ " copper tubing in the case of 28 Mc. beam, or  $\frac{1}{2}$ " copper tubing in the case of 50 Mc. beam.

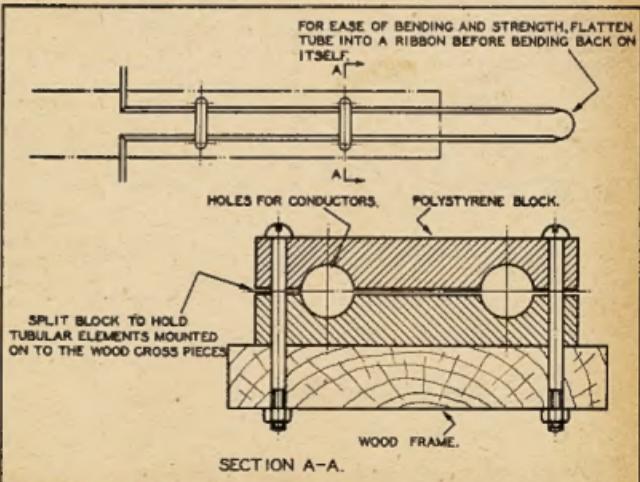
Reference should be made to "Amateur Radio," July, 1947, page 5, for the impedance versus spacing diameter curve for conductors to ensure that the quarter waves between the elements are arranged to assume an impedance of 300 ohms.

The folding back of each element which is a half wave folded back on itself, should be accomplished by hammering it flat at the centre point which makes an easy method of bending and strengthens the whole job, as instead of being a bent tube it is a ribbon of flat metal.

The builder is advised to braze the tubing into one solid grid to ensure that the beam is in complete electrical contact throughout its length.

The method of mounting is to make a

(Continued on page 8)



# The BC696 and BC457 Transmitters

By F. M. NOLAN\*, VK4FN

The BC696 and BC457 Transmitters can be very simply converted to make excellent v.f.o.'s for the Amateur bands. Before commencing the description of the alterations necessary to convert for Ham use by VK4FN, the following description of the units is reprinted from "CQ," May 1946, to acquaint the reader with their operation.

An increasing amount of surplus Army equipment is appearing on the civilian market. Among various items of interest to the Radio Amateur is the SCR274N, an aircraft unit that is very easily adapted to Amateur use as a stable, variable-frequency oscillator (v.f.o.), either for a.m. or f.m. operation. The SCR274N is the overall designation given the principal components of a multi-channel aircraft radio receiving and transmitting set-up used on thousands of planes and now "declassified." So that the reader may know what to look for, the army numbers of the equipment are as follows:—

The receiving end consists of three separate units—the BC453 (190-550 Kc.), the BC454 (3 to 6 Mc.) and the BC455 (6 to 9.1 Mc.). These receivers operate from the aeroplane 24-28 volt storage battery and each contains a separate dynamotor for plate power. It is an easy matter to substitute 6 volt tubes for the 12 volt series type originally in the receiver, and re-wire the filament string for parallel 6.3 volt operation from a standard filament transformer. (Alternatively, a 24 volt transformer may be used to energise the heater circuits with the receiver left as is.) Any light 250 volt receiver power supply will provide plate power for the sets, or a vibrator pack may be used if mobile operation is contemplated. These receivers are very sensitive, incorporating an r.f. stage, b.f.o. for c.w. reception, and, all in all, make excellent receivers up to approximately 10 Mc.

Four separate transmitters are included in the sending unit. The BC696 covers 3 to 4 Mc., the BC457 from 4 to 5.3 Mc., the BC458 5.3 to 7 Mc., while the BC459 tunes from 7 to 9.1 Mc. Each transmitter consists of a master oscillator tube (1626 or 12J5) exciting a pair of beam tetrodes in the power amplifier stage (1625s or twelve volt 807s). The tubes in the amplifier are connected in parallel. The master oscillator and r.f. power amplifier tuning capacitors are ganged, and an excellent worm drive, with plenty of reduction, is incorporated in the dial system. Included in each transmitter is a piezo-electric crystal and an electronic resonance indicator for calibration.

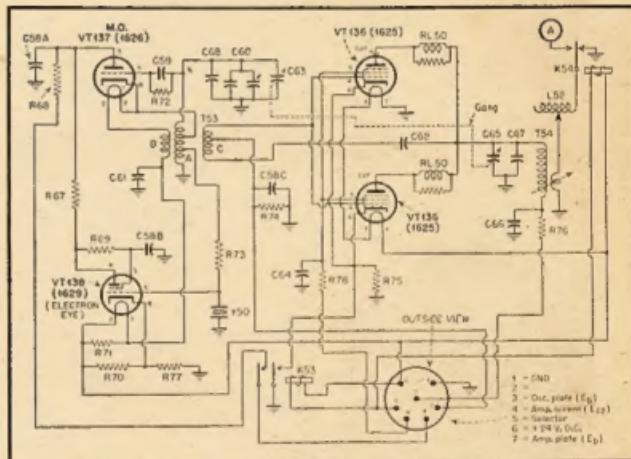
The power output may be varied from a few watts to approximately 55 watts according to the power supply on hand. Thus, one of these little jobs may be used as a fixed variable-frequency

transmitter or as a driver for a higher power amplifier.

The components are of exceptionally high quality and the assembly rigidly constructed. With a stabilised 200 volt supply to power the master oscillator, the drift is very small. This equipment was designed to hold the frequency quite constant in aircraft under vibration and extreme temperature changes; so it can be understood that the frequency variation will be practically nil with the set mounted on the operating table, subject to little vibration and relatively constant temperature.

A power supply, preferably a regulated 220 volt unit, is used to power the master oscillator—while anything from 200 to 550 volts, unregulated, is suitable for the amplifier, depending on the desired power output.

The dial is very closely calibrated and a crystal resonator is used to check the calibration. This is very simply observed by tuning for maximum indication on the electronic eye tube and then noting if the dial reads exactly the crystal frequency. The transmitter is then calibrated over the rest of the dial. This crystal does not stabilise the frequency in any way—it is merely a built-in standard to check the master oscillator dial setting. A crystal of another frequency could be substituted—for instance one spotting a particular pet or net operation frequency. This would enable the operator to place himself exactly on a particular frequency in the band.



## RE-WIRING TO USE AS V.F.O.

A number of members have procured either the BC696 or BC457 Transmitters from Disposals, and desire to use them for v.f.o. operation and it is proposed here to outline the steps taken by the writer to put them in operation as v.f.o. units.

Being fortunate enough to have access to a handbook on the SCR274N equipment, of which these units form part, a study was made of the circuit details from which was learnt that the oscillator coil has three windings (see Fig. 1), one being the usual electron coupled oscillator winding which is tapped and connected through a resistance to the grid of a magic eye tube which is used as a crystal oscillator for calibration purposes. Another winding couples the output of the oscillator to the p.a. tubes which are connected in parallel, this winding being centre-tapped, one side going to the grids of the p.a. tubes and the other to the neutralising condenser, while the centre-tap returns through a bias resistance to earth. The third winding is placed in series with the heater of the oscillator tube.

To make the alterations necessary for use, turn the chassis upside down with the oscillator tube and magic eye to the rear. On the left-hand 1625 tube socket pin No. 1 has three white wires connected to it. One of these can be seen going to the front of the unit, one towards the rear and the third towards the right-hand side. Disconnect the wire going to the front of the unit and also the one to the right and connect

both to socket connection 2 which is spare.

From pin 7 of this same socket disconnect the white wire and reconnect to pin 1, from which the two other white wires were removed. Next bridge pins 2 and 7 together and run a wire across to pin 7 of the right-hand 1625, this change having placed the heaters in parallel and completed the circuit for the control relays which control the h.t. and stand-by circuit as well as the antenna switching which is the output terminal for the new v.f.o.

Place the oscillator and magic eye heaters in parallel disconnect and remove the resistor mounted on the rear wall of the chassis. It is present connected to pins 2 and 7 of the magic eye. Disconnect also the 4 watt resistor connected between pins 2 and 8 of this tube, and remove the white wire from pin 7 of the socket and re-connect to bottom left-hand pin of the power socket (pin No. 6). Now bridge pins 1 and 7 of the magic eye socket and earth to chassis. This completes the work under the chassis leaving a few alterations "postscript."

Remove the antenna coil and from the connection on the tank coil where the T.C.C. wire from the antenna coil was connected and run a new wire to the antenna terminal via the relay contacts. The needs of individuals may be varied at this point. At 4 FN the antenna terminal was removed and a co-ax connector substituted, also the relay contacts were not used.

All that remains is to connect a power supply to the socket, with 12 volts d.c.

via switch to pin 5 of power plug to operate relays and the unit is ready for operation, the rest of the supply being 12 volts a.c. for the heaters, 250 volts d.c. to the plates of the 1625s, 200 volts to the screens and 105 volts to the oscillator, stabilised by a VR105/30.

Tune the main dial to the crystal frequency and switch ON, giving the unit about 30 minutes to settle down. Note whether the magic eye shadow is wide (i.e. 90°). If not, the oscillator is not tuned to the crystal; to adjust, slide back the small cover on top of the unit giving access to the oscillator adjusting screw in the coil box. Carefully adjust until the eye angle is 90°.

The units in use here have proved to be very stable and, as could be expected, have oceans of output. The output in fact is somewhat embarrassing and it is proposed to remove one of the 1625 tubes and re-adjust for single tube operation. This calls for a change in the grid bias resistance and an adjustment to the neutralising condenser which will be found on the right-hand side wall of the unit. This job however is not a difficult one. (Another alternative is to cut the h.t. supply to the tube and leave it in, which would not upset neutralising and only call for a change in bias.—Ed.)

## CONVERTING TO TAKE 807s

If a unit has been purchased which has no valves, it may be more convenient to use 6 volt filament types. The 1625 sockets can be easily altered to take 807s as follows:

Remove the "U" shaped springs from pins 1, 2, 4, 6 and 7 on each socket, and then bend contacts apart slightly.

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A small rat-tail file can now be inserted in the socket holes and the insulation filed. Holes 1 and 7 are filed half the diameter of an 807 socket pin in the direction of the centre of the socket. Hole 4 is elongated equal to its own diameter, also in the direction of the centre of the socket. Holes 2 and 6 are filed equal to their own diameter, in the direction of hole 4.

After checking to see the 807 fits correctly, replace the socket springs.

In the original 7 pin sockets, pins 2 and 5 were used as tie points, having no connection to the valves. It is therefore necessary to remove the plate resistor from its tie point on pin 2 of the right-hand socket, and connect direct to its by-pass condenser. On the left-hand socket the relay leads connected to pin 2 (in article), are shifted to pin No. 7 and the strap between pin 7 and 2 removed.

The screen leads which were on pin 3 of each socket are re-wired on pins 2.

#### BAND SPREADING

The degree of spread on the Amateur bands can be increased by placing a fixed capacity in series with the oscillator and p.a. tank condensers. These condensers must have the same value as to retain tracking. Values of 100 pF. give a good spread and should be good quality mica condensers, the oscillator condenser being a zero coefficient ceramic preferably. The 7-7.2 Mc. band occupies about 90 degrees of dial space on the 5.3 to 7 Mc. model with the series capacity specified.

## Series Phased Aerial Arrays

(Continued from Page 5)

main boom according to the circumstances and the room available and provide cross numbers of light, strong timber and attach grid which is supported by a number of polystyrene split blocks. This holds the whole grid of tubing rigid on to the wooden frame and the method of rotation is one of normal practice and must be left to the intending builder's imagination, his circumstances and his pocket book.

Reference is made to the method of folding the quarter wave feeder and terminating stubs back under the beam to save room. This in no way affects the behaviour of the beam. It should be remembered that the direction of propagation is back over the feeding end of the beam when it is terminated with a 300 ohm resistor.

#### A TWIN RIBBON SERIES PHASED BEAM

Reference to the drawing of the Series Phased Beam will suggest that there are more ways of filling a pig other than choking him with butter. There is available these days, twin ribbon feeder cable in various impedances. It is suggested that the feed from the transmitter tank could well be in 300 ohm ribbon and the elements of 80 ohm - the feed between each section to be also of 300 ohms.

The whole could be laid out on insulators on a wooden frame and would be light and effective. The feeding stub

need not be used as the 300 ohm ribbon will eliminate the necessity for its use. A quarter wave of the same 300 ohm cable can then be used as the terminating stub and this may be very conveniently folded back under the beam. If a bi-directional beam is desired, this too can be dispensed with altogether.

#### FEEDING AND BALANCE OF BEAMS

One of the most important subjects which Amateur transmitters should give attention to is the matter of feeding. The old idea of stuffing a few turns into the tank should be avoided. This practice almost invariably results in capacity coupling and if the case is bad may result in the beam and its feeders acting as a Marconi radiator against ground or the electric wiring system.

An aerial tuner should be used in all cases. This will ensure good results, by elimination of standing waves, b.c.l., etc., and above all reduce the losses in the system, thus ensuring maximum energy in the radiator.

The reader is strongly urged to read "Parallel Standing Waves," by W3BLZ, in "QST" of Jan. 1948, page 45. Application of the suggestions contained in this useful article will help towards the objective.

#### ALTERATION TO V.H.F. BAND

As a result of negotiations between Federal Executive and the P.M.G.'s Department the band 144 to 148 Mc. becomes available for exclusive Amateur use as from the 1st May, 1948. This band replaces the 166 to 170 Mc. band.

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## "HOW TO LOSE FRIENDS"

By E. A. Charles, VK5YQ

Before proceeding I would like to apologise to all those to whom I caused unnecessary QRM in 1947. I refer in particular to those nightly 14 Mc. phone cross-town long-winded inane ragsheets. It shall not occur again.

Good operators are the result of successful experience. It takes some a lot longer than others to catch on. Instead of complaining, let's try and help the other guy learn a little more rapidly.

**THE SECRET OF SUCCESSFUL DX IS THE ABILITY TO VISUALIZE THE SITUATION AT THE OTHER END AT THE TIME!**

To illustrate I will quote two examples. The first, Friday evening, 2nd January:—VK-ADX v.t.o.s. onto W3JCR's frequency and answers his CQ, with about 50 calls before giving his own. By some miracle he is partly heard; by a greater miracle, answered. W3JCR explains, says his name is Bill and goes over. Back comes ADX (who obviously didn't get this), "You're Readability 5 and Strength 8 to 9 old man!" Neither are heard again.

Here is what ADX obviously does not know. W's phone band is 14200 to 14300 Kc.; there are quite a lot of American stations licenced. He was lost in QRM before he started. Any station that calls very long without giving his own call is automatically passed on.

When the Ws aren't coming through it is nice to move into their phone band to be clear of QRM. However, how many of you give it real thought—if you listened with a little more interest you would most likely hear some VK4 or VK8s working them. So you don't QSY there to give them QRM unnecessarily.

If you don't know how the bands are used, ask someone—that's how we all learn.

Second example, Saturday afternoon, 3rd January:—VK2OQ contacts TI2OA from about 10 Kc. above his frequency. VK-JP was there, over-modulating and v.f.o-ing onto each South American as he appeared. I did hear TI2MA go back to JP as ---JC, but at that time, TI2OA had called CQ at S9 plus. Before VK2OQ has finished, JP is on his frequency frantically calling again. They have another—over—at least TI2OA does—then JP calls again despite the fact that Otto had said he was looking for VK3SB. Noting the absence of the VK3, I picked a frequency a little clear—lower than the above splatter, and contacted TI2OA. But did I hear his final? No! JP was on him again calling! I pulled the switches in disgust! But I'll bet he didn't get that QSO.

The correct thing to do—picture yourself at the other end—would you answer a station that rudely interrupts your conversation? You'll tune away to someone in the clear. Simple, isn't it?

Unfortunately some people let their enthusiasm over-ride their better judgment. What if you do make the DX

Century Club in record time, you'll lose your good name in the process. DX will always be with us.

Most people call far too long. Admittedly some stations have HRO receivers with 400 degrees of bandspread, but a chappie usually first tunes the end of the band on which he himself is operating. Put yourself at the other end, OK—if you are on the opposite end of the band, wait until you think he has reached there, and call briefly. You have saved wasted calling should he find someone on his end of the band. Personally I always specify at the end of a CQ just from which end of the band I shall commence to tune. And when I answer (invariably in the case of VK contacts), I call no more than six times, sign and listen. If he doesn't come back, I wait until I think he has tuned to the other end of the band, then call briefly again.

The QSO itself. Unless you have something unusual in the way of antenna, receiver, or circuit hook-up, the other chap doesn't want to know—he's far more interested in the way his own rig is performing. However he does like to see how the antenna and power results compare. If he is new, you may be able to help him overcome a spot of bother which concerns him much more than the DX you are itching to boast about. And please don't talk for the sake of talking to the "great unseen audience." There are lots of listeners who aren't "wireless cranks." Remember, your operating style is a fair indication of your character!

Then there's the matter of giving information. It pays to be sure of what you say—we can all make mistakes at times. The other chap will undoubtedly look it up and/or try it out—and undoubtedly change his opinion of you. Why not quote a reference—"I saw it in so and so." After all there are few of us with laboratory facilities, and far less who know something that isn't to be found in a book somewhere.

This "Hi-Hi" business on phone. To those who must punctuate each sentence with this method, why not break the monotony by using a few "Fee-Fee," "Ho-Ho" and "Haw-Haw's" if you can't laugh naturally. Granted a normal guffaw could be lost in QRM when working an XU or KQ.

## "NEVERMORE QUOTH THE RAVEN!"

By "Damocles"

Great game this Ham racket—been in it a long time haven't you—all of ten years or so—know all there is to know—and don't hesitate to air the vast fund of knowledge. Big authority and all that. You are Mr. Ultra-Modern Era phone-man, yes, you can punch a key too, but you only do that on occasions; knowing that if what you sent in "the clear" reached authority, there might be storm clouds on the horizon.

No, you aren't in the radio industry, but you gave that other VK an ear-bashing about what he should do. He couldn't be expected to know over-much

—he is only a lab. technician with one of the largest radio engineering concerns. You couldn't be expected to know either that he was modest enough to pass your gab, in one oreille and out the other, but you know more than him; you just read it up in the Hand-book in the long-suffering boss' time.

Yes, a plausible mike technique sure impresses that new Ham, but depend upon it that he will find you out, perhaps sooner than later. Your station is a beacon light in the wilderness of dead-heads on the band; your "audience" awaits your advent with bated breath. And then, l'entre magnifique! Wise-cracking, "Smart Alec Comebacks" and sepulchral "Heh, Heh, Heh's" of the kind that infect your imitators so profoundly. This is the Era of Progress; of speech and still more speech—ad lib—ad infinitum—and to the devil with the morse key.

Fancy any poor mutt wanting to really use c.w. and to waste time thusly. Besides, how could the girl friends be impressed if they couldn't hear those dulcet honeyed tones. And when they visit your shack, which is so often, what more fitting than they be duly impressed with "Reaaagers" and "Brrrrreaks"—with a few Wilco's thrown in for good measure. Thus is your superb wizardry demonstrated.

Atmosphere is provided by gurgling liquid sounds, clinking glasses and thinly veiled innuendoes, so full of zest. The audience there and "on the air" are rocked to the foundations. It is fitting to inform the world at large that you suffer from "hangovers" as a result of "sessions." It is the very pinnacle of good taste that exudes from your microphone, or so you dumbly imagine.

It is impressive to yap in staccato phrases, inferential tones and ill-concealed riddles—transparent in fact to anybody with the smallest IQ. There are lots of fellow-hams that you don't like on the air—but you don't tell them so directly—they mightn't be so complacent about it. The technique is indirect reference with an under-current of spreading ill-will far and wide. But the saying that "he who throws mud must expect some to stick to himself" is just as true in this Amateur Radio game as in other walks of life. And sometimes prudish worms turn out to be angry lions.

Far better is it to accept this erstwhile pleasant hobby of Amateur Radio as a hobby—for that after all, is just what it is—nothing more or less. When individuals make it a medium for antagonism between fellows, then it becomes something else—and even the proverbial Raven would be averse to it.

And of which is to draw attention to the unpleasant fact that there are instances of phone operation on our bands that would be better eliminated—for the good of the hobby. These are casual observations, they mention no specific individual, the only offence likely to be taken is by those with guilty conscience. There are phone merchants of the ilk portrayed among us but they are in the minority. But a cancer starts with a minor ailment!

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## KINGSLEY NARROW BAND F.M. ADAPTOR

This unit consists essentially of a limiter and a discriminator, the purpose of which is to permit reception of frequency modulated transmissions.

Any Communications type receiver with a 455 Kc. i.f. channel as the final intermediate frequency may be adapted for f.m. in this way. "The New Look" type of final low frequency i.f. channel (to steal a term from "QST") would of course be the wrong i.f. frequency, but how could one receive f.m. phone with an i.f. pass band with this form anything?

The adaptor, which is illustrated in the Kingsley advertisement in this Magazine, uses a 6J5 as a cathode follower, connected directly to the secondary of the final i.f. transformer and, due to the small loading effect of the well-known cathode follower system, the alignment of the i.f. transformer is readily restored by a very minor adjustment to the secondary trimmer or tuning core. In order to take the best advantage of the cathode follower, the adaptor is designed to plug directly into a six pin socket which is to be mounted on the rear of the receiver chassis, as close to the output of the i.f. channel as possible and as the other connections to the receiver circuit are heater, h.t. supply and audio frequency input, these lead lengths are relatively unimportant

From the cathode follower 6J5 via resistance capacity coupling we go to the 6S7J limiter. This stage is the conventional grid leak, low plate and screen voltage connection, and in the limiter plate circuit is the special balanced discriminator transformer which in turn looks into a 6H6, using the Foster and Seeley discriminator circuit. This discriminator transformer has a 1/2 in. wire wound primary fitted with an iron dust pot and tuned with an iron dust core to 455 Kc. The secondary is a balanced winding in two sections and is padded with a fixed silvered mica condenser and tuned with a 3 to 30 pF. trimmer.

The discriminator output is taken via a coupling and filter system to the audio frequency input to the receiver and this is an efficient and convenient place for the switching to be made from a.m. to f.m.

In fitting this adaptor unit, the input to the a.f. gain control is opened and both the output from the original a.m. detector and the input to the a.f. channel are run in shielded wire via the socket at the rear of the chassis into the adaptor to pick up the output from the f.m. detector, then along to a switch, to be fitted in a convenient place on the front panel of the receiver. Thus once the unit is installed and the two trimmers peaked to the i.f. frequency, the simple operation of a single pole double throw toggle switch, changes the receiver immediately from a.m. to f.m.

## BRITISH RADIO COMPONENTS MANUFACTURERS' EXHIBITION

Federal Executive received an invitation to attend this Exhibition, and as readers will realise it was impossible for a member of F.E. to accept this invitation. Federal Executive requested Mr Ken McTaggart (VK3NW/G3CUA), who is at present in England, to represent the Wireless Institute of Australia.

Ken duly attended the Exhibition and the following is an extract from his letter, and we have no doubt that readers will find it interesting.

"This is just to let you know that in due course I attended the Radio Components - Manufacturers' Exhibition at the Grosvenor House Hotel and found it of very great interest. Under separate cover and by ordinary mail, I am sending you one of the small "guides" to the exhibits which will give you some idea of the number of exhibitors and the variety of components on show, and also a couple of leaflets which describe some new departures in the design of speakers which I thought of special interest.

"It would be impossible for me to describe even a fraction of the good things I saw. This country appears to make every imaginable component nowadays, and the quality seems of a high order. Unfortunately in the shops the prices are rather too high and many things are in short supply, but that does not alter the fact that the manufacturers here are wide awake and out to produce the goods.

"I might mention in particular the very fine ceramic mouldings that are made for switches, valve sockets, condenser insulating standoffs, and so on; the variety of plastic insulated cables including the wide range of 'twin lead' of various impedances, and co-axial cable from approximately 1" diam. up to over an inch; a wonderful assortment of relays of all descriptions; speakers from 2" to 20" and larger for public address work—including the new speakers described in the pamphlet I have sent which are from 2" to 8" diam. and only 1" to 1" deep, very useful for portables, mantle models, etc., and anywhere where space is at a premium.

"This country is also producing splendid meters of all kinds, also a wide range of microphones, while fixed condensers of various sizes and tolerances (down to  $\pm 0.5\%$ ) and finished in 'lacquer,' 'manufacturers' semi-tropical,' and 'fully tropicalised' finishes make one's mouth water.

"I could go on like this for many pages but it would not tell you a great deal. To summarise, I would say that things are booming here and England is producing radio gear equal to any in the world and better than most. Thank you once again for sending me the invitation.

"Yes, I see Elgar Treurne periodically and have passed on your 73. He maintains regular contact with his father 2BM and seldom misses a morning. I

have not been so fortunate, but have contacted a number of the boys including 3YP, 3BZ, 3CZ, 3XU. Also some VK2s, 4s, 5s, 7s, and one VK6 I have been on 58.5 Mc. quite a lot and find conditions there very good with much more temperature inversion than we get in VK3, enabling work from 50 to 200 miles to be done quite regularly. 50 Mc. has now faded out again, and unfortunately I was not able to get on during the excitement. However I may be able to do something in the summer before I leave here.

"I get the Mag regularly—although belated—and am very glad to see that the 50 Mc. fellows are keeping up the good work with field days, Spor. E and so on. One reason for wanting to return is to take part in those most enjoyable outings to the hills!"

## FRENCH EXPEDITION TO THE ANTARCTIC

It will be recalled that Monsieur Yves Valette, who is mentioned, was a guest at a recent general meeting of the Victorian Division and spoke of the proposed French expedition to the Antarctic during a short address to members.

Monsieur Valette was accompanied by Monsieur G. B. Perronne, Commercial Secretary to the French Consulate in Melbourne, who approached the Victorian Division of the W.I.A. in making the initial enquiries concerning the possibility of the French expedition maintaining constant radio contact with Australia.

The following article appeared in the Melbourne "Age" on Saturday, 3rd April.

"France will send a well-equipped scientific expedition to the Antarctic at the end of this year. It will be the first French party to visit the Antarctic since 1909.

"M. Yves Valette, a French engineer, received a letter from the French Government confirming the plan to send an expedition southward when he stepped ashore at Williamstown on Friday, 2nd April, from H.M.A.S. LST3501, which returned from the Antarctic. He will be one of the leaders of the expedition.

"M. Valette has had wide experience in the north polar regions, and 'limbered up' with a 300-mile trek on Spitzbergen before he flew out to Australia, to accompany the Australian party to the south. He is a champion skier.

"He went to the Antarctic in H.M.A.S. LST3501 to study conditions and make an advance survey for the French expedition.

"M. Valette said the expedition would go southward in minesweepers used during the war by the Free French. He said the party would include meteorologists, geologists—who will look into the rumor that uranium ore is available in the Antarctic—and cosmic ray experts.

"All the details are being worked out in Paris," he added. "It will be a most important expedition. We must establish our claim down there." The French party will sail from Australia."



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# DIVISIONAL NOTES

Federal President.—W. R. Gross, VK3WG; Federal Secretary.

W. T. S. Mitchell, VIGUM, Box 2611W, G.P.O., Melbourne.

## NEW SOUTH WALES

Secretary.—Wal Nye (VK2XU), Box 1734, G.P.O., Sydney.  
Meeting Night.—Fourth Friday of each month at Science House, Corner Gloucester and Essex Sts., Sydney.

Divisional Sub-Editor.—R. Deal, 209 Oberon Street, Coogee.

Zone Correspondent.—North Coast and Tablelands Zone.—A. P. Saunders, VK1CPA, H-1 St. Post Macquarie, Newcastle; E. J. Baker, VK2FP, 13 Station St. Hamlyn, Newcastle, Coalfields and Lakes: H. Hawks, VK2YL, 27 Comfort Ave, Cessnock. Western: G. J. Russel, VK2QA, 116 Roger St. Nungan, South Coast and Tablelands: R. H. Rover, VK2DZ, 42 Pettif St. Yead, Southern: E. N. Arnold, VK2UO, 673 Forrest Hill Ave., Abury.

## VICTORIA

Secretary.—A. B. D. Purvis, VK1VQ, Box 2611W, G.P.O., Melbourne. Telephone F9 6997.

Meeting Night.—First Wednesday of each month at the Radio School, Melbourne Technical College.

Zone Correspondents.—North Western: B. R. Mann, VK5WV, Quambatook; Western: C. C. Waring, VK5YW, 121 St. Kilda, South Western: B. S. Goss, VK8B, 17a Argyle Street, North Balalat, North Eastern: D. Tacey, VK3DW, 18 Harold St. Shepparton, Far North-Western: Harry Dobbin, VK3MF, 42 Wa nra Ave., Mildura, Eastern Zone: J. D. Chilver, VK3DZ, 20 Smith St., Geelong.

## FEDERAL

### THE CONVENTION ON

The Eighteenth Annual Federal Convention of the Wireless Association of Australia was convened at the rooms of the New Zealand Division at 7.30 p.m. on Friday 30th March, 1945. Being the third Convention since the resumption of lost dues in 1945, it was again represented by delegates from all Divisions.

The following gentlemen were: New South Wales—W. R. Gross, VK2XU; Queensland—Mr. H. N. Stevens, VK3QD; Queensland—Mr. F. M. Nolan, VK4CN; South Australia—Mr. H. L. Austin, VK5AW, also as chairman, Mr. A. F. Newbold, VK5SD; Western Australia—Mr. A. J. Moore, VK3WV; Tasmania—Mr. J. Brown, VK1BJ. Also in attendance were the Federal Vice-President, Mr. A. G. Glover, VK3AM, Federal Secretary, Mr. W. T. S. Mitchell, VK3UM, Federal Treasurer, Mr. P. Evans, VK3OZ, Federal Publicity Officer, Mr. G. W. Manning, VK3WV.

Chairman of the Federal President, Mr. W. R. Gross, VK2XU, was unable to attend the Convention. We are pleased to say that he is now well on the way to recovery, and we long will be in touch with him hereafter.

Mr. Evans on behalf of Federal Executive, welcomed the visitors and was ably supported by Mr. H. N. Stevens, Victoria. Following on the reply made on behalf of the delegates by Mr. J. M. Moyle, the motions were read for the position of Chair and Vice-Chairman of the Convention.

The first business of the Convention was to reach agreement on the title of the Federal Constitution. It was agreed that the 1947 Federal Constitution of the Wireless Institute of Australia be used as the title of the Constitution of Australia in 1948. To see to its revision in 1947.

Following discussion on the Federal Constitution, it was found that a slight re-drafting of three sections were to be made by Federal Executive and submitted with the Constitution of the Convention to all Divisions for ratification.

A copy of the Federal Constitution will be made available for the perusal of any financial member upon application to his Divisional Secretary.

With regard to the drafting of a Uniform Divisional Charter, the chairman gave an outline of the progress to date.

The Convention adopted the principle now in use in the New South Wales Division for use in all Divisions in relation to Radio Clubs.

As the time was not ripe for the appointment of full-time Federal Secretarial this matter was left in abeyance.

A report was made by Federal Executive giving details of the plan at present under discussion for the formation of an H.A.A.F. Reserve and in addition will collect and collate all available data regarding

## WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

**VK2WI**—Sundays, 1100 hours EST, 7190 Kc and 2000 hours EST 5040 Mc. No frequency checks are available from VK2WI.

**VK5WI**—Sundays, 1100 hours EST 7196 Kc. Spot frequencies every fourth Tuesday between 7000 and 7200 Kc, every 10 Kc. Individual frequency checks of Amateur stations given when VK5WI is on the air.

**VK6WI**—Sundays, 0900 hours EST simultaneously on 7195 Kc, 1434 Kc and 5204 Mc. Frequency checks are given two nights weekly, and the hours are announced during the Sunday broadcasts.

**VK5WI**—Sundays, 1000 hours SAST on 7168 Kc. Frequency checks are given by VK5SDW on Friday evenings on the 7 and 14 Mc bands.

**From VK6WI**—Sundays, 0930 hours WEST on 7168 Kc. No frequency checks available.

**VK7WI**—Second and Fourth Sundays at 1030 hours EST on 7174 Kc. No frequency checks available.

## QUEENSLAND

Secretary.—G. O. Augustesen, Box 638, G.P.O., Brisbane.

Meeting Night.—Last Friday in each month at the State Service Building, Elizabeth St., City.

Divisional Sub-Editor.—H. T. MacGregor, VK4ZU, "Moquet" Eldon Rd., Windsor.

## SOUTH AUSTRALIA

Secretary.—E. A. Barber, VK2SM, Box 1234K, G.P.O., Adela Island.

Meeting Night.—Second Tuesday of each month at 77 Victoria St. Adela Island.

Divisional Sub-Editor.—W. W. Parsons, VK5PS, 483 Esplanade, Henley Beach.

## WESTERN AUSTRALIA

Secretary.—W. E. Corcoran, VK7AG, 7 Howard St., Perth.

Meeting Night.—Second Monday in each month at the Builders Exchange, St. George's Terrace, Perth.

Divisional Sub-Editor.—R. W. S. Hugo, VK6EW, 8 View St., Subiaco.

## tasmania

Secretary.—Brown, VK7BJ, 12 Thirla St., New Town. Telephone W 1328.

Meeting Night.—First Wednesday of each month at the Photographic Soc. of Vics. Rooms, 158 Liverpool St., Hobart.

Divisional Sub-Editor.—T. Connor, VK7CT, 386 E. Tasman St., Hobart.

Northern Correspondent.—C. P. Wright, VK3JZ, 3 Knight St., Launceston.

## SILENT KEYS

PHIL BREWER, ex-VK5BJA

We regret to chronicle the passing, during April of an old friend and colleague in Phil Brewer, ex-VK5BJA. Phil, who first came on the air about 1927, was a power in the DX realm up to 1928. His operating ability was second to none. He was a member of VK5BJA in the picture, and was a Past President. Of a quiet and retiring disposition in full, possessing an intense sense of humour, Phil endeared himself to those fortunate enough to break down his natural reserve and was a dear and dear friend to all who knew him. His loss is his own uncomplaining fit since 1942. Phil did not renew his licence after the recent World War. To his sorrowing wife and young son was the comeliness and symphony of all old timers in Amateur Radio who deeply mourn his passing.

existing emergency networks and evolve a workable emergency scheme for a National Amateur Network.

The Convention also felt that there was a need for the establishment of an H.A.A.F. correspondence centre and in this connection has instructed Federal Executive to start implementation of such a centre.

Considerable time was spent in discussion of the P.M.G. regulations, and it was decided to seek certain changes, notably the payment of license fees on those particular State and the ingenious "I" for the "I" "programmes" of modern design between the words "programmes" and "the Amateurs" in Regulation 107.

That Federal Executive continue its endeavours with the P.M.G. to have the regulations revised to ensure that amateur station licensees receive the same consideration as other radio users in regard to minimise interference and postpone the introduction of legislation to curb such interference.

All members are invited to log all types of transmissions from commercial bands and others not supposed to be in the amateur bands, and logs are to be forwarded, via their State Councilors, to Federal Executive.

The Convention confirmed the motion that W.L.A. traffic and broadcast channels be kept clear at the times and on the frequencies in use from time to time and to publish "Amateur Radio" in order to avoid in this direction. It was considered that Federal Executive evolve a plan for all official W.L.A. stations to operate on a frequency of 7190 Kc. on Sundays and all members are requested to keep that channel clear from 9 a.m. to noon E.A.S.T. After official broadcasts have been made

the W.L.A. station will change to a frequency to be determined for intra-state working and thereby permit the next Divisional broadcast to commence. Your opinions co-operation is desired in this connection. If you please will write so by an amount of 10/- postage the same appears with each official letterhead.

The illegal practice of breaking in on QSO for the purpose of intercepting factitious remarks and the abuse of the v.f.o. was strongly condemned. In view of the recent Editorial in Amateur Radio, the author of which is a member of the Divisional Executive, it is considered that the burden of proof in such instances lies with the offender concerned and with fact police out the wrongs of such operation, also that he is likely to meet with the full weight of the law and that such practices are likely to be condemned with the sensible procedure adopted by stations notifying their relatives to join a network or group of stations who habitually work together, if this is, station operator switches on earlier after calling and says, "This is a W.L.A. station" and the V.F.O. is immediately cut earlier until invited to transmit.

It was also considered that the P.M.G.'s Report, when requested to allocate VK5 calls to Northern Territory stations and VK1 to Australia in Capital Territory or other special stations.

Included in the agenda items was the hasty annual that "a gentleman's agreement" be made to observe portions of one band for v.f.o. operation. This was submitted and all delegates were asked to bring the matter before their Council for consideration.

It was felt that after listening to the various types of amateur alphabets in use from phone stations that were confirmed, a table of such in this form was to be submitted to the one published in the P.M.G. Handbook should be encouraged. In order that an amateur may standard phonetic alphabet be adopted the Federal Executive is communicating with the International Amateur Radio Union to this end.

When these encouraging contests came up for discussion it was decided that the DX Contest be conducted in October in each year alternatively by the N.Z.A.R.T. and the Federal Executive. In 1945 it was decided to be conducted by N.Z.A.R.T. and in 1946 it is intended that The Royal Mail will be touring Australia and New Zealand and the Contest, which will be conducted by Federal Executive, could be suitable known as the "Royal Communication Contest". No doubt there will be certain changes to be made in connection with the use of the word "Royal".

Contests, in the future, shall not exceed in duration 48 hours at any one period and the total operating hours shall be limited to 26 hours consecutive operating.



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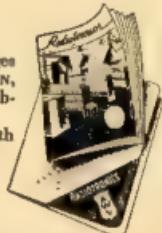
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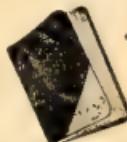
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conceived to send to Adelaide and its suburbs a news item on the history of South Australia, something unprecedented in the history of South Australia. The damage to amateur shack equipment, aerials, etc. to say nothing of the interruptions to transport, communications, and public utilities has left every body feeling like a limp rag. The sentiment naturally fell the full strength of the blow, and we body language was evident. I have had a break for three nights. I have been washed out of my shack, and believe it or not, is in this year of our Lord 1948, I am attempting to write these notes beneath the feeble glimmer of a hurricane lamp.

To fill my cup of bitterness to the brim, I have just been informed that Mrs. Barber (the *XYL* of 5MD) is looking for my blood for writing a paragraph regarding the dirty slab in the sink upon her return from hospital. This has cut me to the quick, and I am unable to explain to her my position that I have checked up on my source of information and I find that the said paragraph was indeed a libel, and I offer my sincere apologies. I find that the kitchen sink was definitely built of dirty dishes as there was no room for any cutlery. Mrs. Barber, for all that has been restored to Mrs. Barber's good house by my silent apology, the compilation of these notes will in any case, be here gone.

The monthly general meeting for April was held at 17 Waymouth Street to a capacity gathering when Mr. W. G. Gobber gave a very interesting and instructive lecture on "Carrier Transmissions". The lecture was very well received and a vote of thanks, proposed by Mr. Ross Austin (5AW), was carried. The speakers present, among the visitors were Messrs. Opie, George, Turner, R. T. Tovington (5TJ), J. D. Nourse (5DQ), and Graham Pitt (5GP).

Ross Harris (5RR), who has been handling SWL to the SWL section, has now moved from 5W1 which was accepted with regret, and in future Mr. Ross Austin (5AW) will be in charge of the W.L.A. Sunday broadcasts from his QTH at Ross Park.

Reports of the hurricane damage to aerials continue to come in and the latest list shows that 5MO, 5RX, 5RE, 5XO, 5LD, 5AJ and 5LW are a few of the Hams minus a skywire.

A Nava. Frigate, the "Barrow" was washed ashore during the aforementioned hurricane and was listing on its side. On Friday, 10th April I wish to deny the rumour started by 5AJ that GPS was chased off the beach for a couple of miles by an irate signalman from the "Barrow" because he tried to talk the said signalman into selling the radio gear aboard as disposal equipment.

Noted that Gav Basye (5EZ) was absent from the general meeting, apparently was stocking up the water cooled *ab* preparatory for a session of DX. The rumour that he has joined the ranks of the truck drivers on the road between Melbourne and Adelaide is also known. Gav Basye to his friends noted, "With a smile on his lips and a curse in his heart, he lets nothing pass him and always gets his truck in on time."

George Hanney (5GD) was on the sick list with a very heavy cold, in fact at one period complications were feared. He is on the road to recovery now. It is possible next time he adjusts his beam in the cold winter air he will remember this bout of sickness!

Joe McMillan's enthusiasm for the W.L.A. led him to visit us on Sunday, 14th March, with the intention of getting the local Hams at Kadina and passing on the Institute good wishes. Leaving at 8.15 a.m. Joe, the *XYL* and the harmonica had a very pleasant trip in the brick morning, and as there was no desperate hurry the time of arrival was not important. The 5W1 crew were all in bed, but was to Doug Hanney (5AJ) bring a notice on the back door "no milk today thanks" told his own story. Anyway, after making a few enquiries, the abode of Les Walbridge (5LW) was found and Doug was called in. Doug came over, phoned himself and the *XYL* about to depart for the front. Joe was right whilst we were having and over 3 cups of tea it was suggested that as there was a bit of a do over at Crystal Brook, what about all going over and meeting the other Hams. Having listened on the "5LW" receiver and not heard any VK6 signals, the party started for Crystal Brook.

The first indication of "CB" was the huge aerial mast of 5CK (one of those common broadcasting stations). Passing through the town the party came to the creek bed, near the showground and found a party of Hams gathered, including Len Muller (5VM), C. A. Dodridge (5CD), H. Hodgson (5AP), and quite a number of unidentified persons. What with *YIAs*, *XYLs*, harmonicas, and visitors it was a grand gathering, and lunch took a long time because it is hard to talk and eat too. Joe passed on all the Adelaide gossip, and made a note of all the country doldrums (for which I think him). Len Muller (5VM) took a photo of the gathering with his huge camera (tripod, red cloth and all) giving quite a formal set with the red cloth, with the evident idea of making the gang look pleased. How successful he was we will only know if we see a photo, so what about it Len?

The next visit was to 5OK to look over the various interesting pieces of equipment installed there. Then the party went to the shack of 5VM and Len has a fine set-up, rack and panel style, but what intrigued everybody so much was a complete shower over the rig. Apparently Len was in such a hurry to get on the air that he forgot to dismantle the bathroom. Anyway it makes an extra good water cooling system (ABZ please note). The day was now drawing to a close and Joe was amazed to note how the time had flown. A little trouble with the petrol feed delayed the departure, but some soap and a little rag soon fixed it up OK. The lights of the city were sighted about 1.30 a.m. and some 21 hours had passed by in an incredible short time. Joe and his *XYL*, plus the harmonica, wish to thank all the folk who helped to make the day such a happy one, and they all hope that it will not be long before they all meet again. The fact that Joe set out to do a trip of 180 miles and finished up doing 260 miles speaks for itself. The benefit to the W.L.A. was enormous, as it shows the country member that he means as much to the Institute as anybody else, and Joe is to be congratulated on his foresight and an thus, etc.

A new receiver is under construction at 5RJ although if the conditions are always as bad as they were on 14th March, more than a new receiver will be wanted to pick up any VK5 signals. Stop Press—According to reliable information two or three magnetic storms in parallel were centred around Rayline that day. No wonder conditions were bad.

Have heard a rumour that Roy Cook (5AC) is due back on the air shortly. Roy is one of the real old-timers, and we all hope that the rumour is correct. Haven't seen you at the meetings lately man, what about it?

5YL has a new c.r.o. hooked on to his receiver and thus, plus his Bendix frequency meter, enables him to hold all the tramp cards when it comes to *honest* reports, etc. Some of the Hams take the *honest* well and others don't. The don'ts are passing *honest* remarks about the 5UL shack wave. Persevering I am neutral.

No doubt about those school teachers, everything must be so exact, or else. Heard 5BY and 5XO to contact the other night and after Doug had given Gordon his report three times, Gordon asked him again and Doug finished my spelling it, SEVEN. Then god then only was 5XU satisfied.

The Police Commissioner has acknowledged by letter his appreciation of the splendid assistance rendered by Amateur Radio as a means of communication during the recent bushfires in S.A. Ross Kelly (5LW) was the recipient of the letter (his second by the way) but Ross Radio also secured

some useful publicity, and our thanks are due to Ross and "Doc" (5MD) for their fine job.

5QD is in the process of constructing a 144 Mc. transceiver and as his QTH is Sumerton, he will be welcomed by the northern suburban boys as a welcome bit of DX.

5LR is looking for a cheap windmill tower so as to be able to lift his present temporary 28 Mc. signal square. Height is not important, as long as a good job almost on the ground that Jack is wondering just how many db. points above 50 he will get when it does rise into the air. Anybody able to give some information as to the availability of a cheap tower?

It is not often that a nickname becomes a fact, but "Pep" Deane is the exception that proves the rule. The name "Pep" came from the fact that Launce (5LD) once upon a time had a voice as low

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in pite as that noted man chance or "Poppey" the strong man. The arrival of a burmite (a bony bancing boy) to the SLD domain makes the "Pop" quite an ordinary Comedian. Mr. and Mrs. Don. By the way, it was just an coincidence that "Pop" parked his car next to SLD at the recent field day (Sorry Gordon but it was too good to let pass).

You all thought that I had forgotten "Pop" didn't you? Well, I haven't, I know that he is using 'em, brass handles for feeder spindles. Take my advice and lock your bathroom doors should we visit you, and don't fall for that sales talk "we'll give you about that 'em and so look," "and a w'd give you a smile." It is one means to get you to almost him, not break in favour of a new one, thereby permitting him to "holt" you for the old one.

General opinion regarding the "Gremelins" in V.K.C. is that whilst it is the business entirely of Mr. Gremel to do what he wants, I think in it is general thought that a mistake has been made. "Gremel" was doing a good job and it was better that he remained anonymous and the opinion of a few disliking Hams should not be allowed to sway the V.K.C. Council to a better judgment. With due respect to Mr. Gremel, Sir, I think Amateur Radio is something in the making and "Gremel" is required.

To anyone who has attended any meetings of club gatherings where amateur got together and "ring crew" quite frequently, it is becoming increasingly apparent that the amateur methods existing at V.I.A. meetings are falling into disfavour. I refer to the "tradition" "lecture," "general business," and then a few minutes for a get together before leaving for home. Whether we like it or not, the amateur is the V.I.A. member. I do not like the custom, those who know as much about the amateur as the expert and there fore are not interested and those who do not understand the amateur and therefore are also not interested. The remaining few who are interested are not in the majority and that is why we do not count. This does not hold for all meetings, now and again we get one out of the box and everyone is more than interested, but it is becoming an obvious fact that if we are to hold members interest at V.I.A. meetings we must give them more than the usual "ring crew" time, more time to go overtime and make each others acquaintance. In short, make it a going over as a gathering of like minded people. I am sure like the gatherings which take place in the local amateur rock.

What's this you ask, how can we do it? Don't see me, but me, I only write the noted seriously enough, so can't I get "something." If you don't ask so bold, I can take it, but if you do, I will ask, then get up on your feet and tell him what you want. The next time the V.I.A. Council is in session to carry out the wishes of members, but if you don't state your wishes early there out. Well, I am not one to do less as yet. I had the pleasure this evening of attending the Annual General Meeting of the Ham Radio Club held at the Gremel's Town Hall. When I first arrived at the Town Hall there was a steady stream of people in making for upstairs, and I followed them like a lamb, naturally telling myself that these clearly were the certain ones that now attract me most. Imagine my surprise upon arriving upstairs to find that I am come upon an anticlimax in not at meeting about so close to commence. Somewhat disengaged I went upstairs, followed by about 15 plus of guys convinced that one summer at least will be "with me." I arrived to the rear of the hall and there came upon a chap with a "QST" in his hand also looking a bit bewildered. He introduced himself to me as SRS and said amably, "I say the man you're Doc Barber aren't you?" I was lost in bewilderment mainly as the appearance was far from originally anticipated, but I bowed, he stopped back a few paces and said in an apologetic tone of voice, "I'm sorry old man, but you do look a bit like him" in a tone of voice that I use when handing ragtag items, hence tigers.

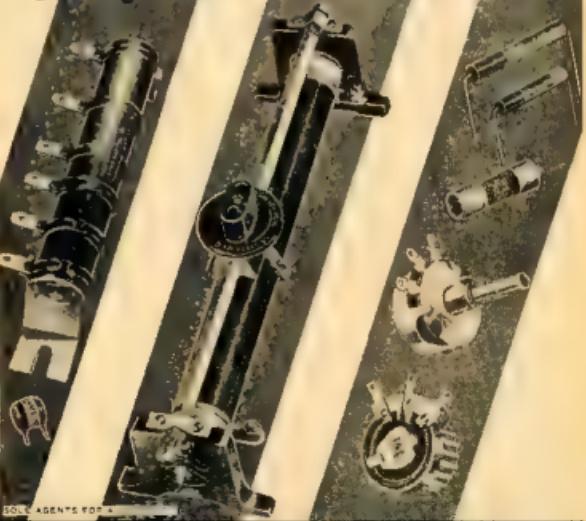
## ANNOUNCEMENT

Interstate visitors are invited by the Victorian Division to avail themselves of the services of the Administrative Secretary, Mrs. Cross, who will furnish suitable introductions and information if requested.

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Amateur Radio, May, 1948

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Asia.—There are still plenty of Asiatics around with the beam turned north particularly VSI, VS2, C, 2, VU, ZL, etc. Three of note were ZE0M, Palestine; AP4A, Pakistan, and VSO2T, Oman, on the South Eastern portion of the Arabian Peninsula.

North America.—We are getting more and more reliable during early and late evenings and during their recent contests many numbers were swapped during the quiet period. A few Canadians were heard but none worked.

South America.—Only one contact—TV5AT, Venezuela.

Central America.—These chaps have been rare lately and the only two heard were both worked, XET1Q, Mexico, and COBEM, Cuba.

## TASMANIA

Here is Tasmania once again with a summary of the doings for the last month or so. The April meeting was well attended and the report of our Convention delegate (TBJ) was received. Apparently the aforesaid conference was almost a manhunt effort of obtaining as many signatures of good will as could be had.

Another field day is set down for the end of April and if the last muster is any indication it should be an a.b. affair. TJA is scheduled to hide the transmitter. This will be the last field day for the year.

Now for some personalities. TVY (Bill Watson) has departed from this fair isle for a warmer climate, to wit Wenzak and was presented with a suitably inscribed pipe by this Division. We will just have to wait to hearing him back on the air under the call sign TJA. TJA is the only one who has not yet returned from the island coming in down here with plenty of punch and seem to be working plenty on 7 Mc. Heaven knows how with the mess that is on 7 Mc. these days.

TOW and TNC also mostly on the higher frequencies that many have patience, those guys, waiting for 50 Mc. still to poke his way through a hole in the jally old ether. Col Wright (TLZ), our northen emueller has been in Hobart for a week or so and was present at our last Council meeting. He is still here and will remain this way, last from 8 until 10 p.m. with TBJ holding the floor most of the time—must try and get him a nomination for the next parliamentary election.

We understand that TBL, who is at present in Melbourne, has been here for a week or so and radio is concerned for the duration of his stay. What a sentiment! Have heard a couple of new call signs in VTK lately, must find out the names of the owners. The Institute in VTK is going ahead by leaps and bounds, and it is hoped to have a new hall by the end of the year.

Now what about some of these call signs that are listed, yet one never hears? Well you chaps, how about a squeak out of your transmitters now and again? The local A.D.C.P. class has about a dozen starters this year and all are keen, so it looks as though the QRM in Hobart is going to be something to cope with in the future—still, the more the merrier.

VK8PD, working portable in Hobart, seems to get through on 7 Mc., and boy can that guy talk! On 7 Mc. one hear 7DW and TLJ and a few more regular c.w. men, and if you chaps don't happen to know, more keys can be bought quite cheaply ex-army disposals.

## NORTHERN ZONE

It was fortunate that TJS would be in Hobart at the time of the Council and general meetings particularly so as our able (and willing) Secretary had just returned from the annual Convention. A general outline of this Convention will be conveyed to all members in due course, possibly even before these notes are written. Any further information to be desired by any member from this Zone, I will be only too glad to give them any more details if it is possible.

This again shows the advisability of having a petition get-together to the items of mutual interest and also that if enough information is shown by individual members a meeting night—possibly once a month—could be arranged.

Mr. C. Cullinan of TJS, a Ham and a member of the I.R.E., has now made arrangements with some of the stations where he is a member of the Amateur to be discussed at their meetings, this Zone will receive an invitation through our Committee to attend such meetings. The first of these meetings to which we are invited take the form of a picture night at which four films on television

## CORRESPONDENCE

Box 52, Leongatha.

Editor, "A.R."—

I am with pleasure that I note that "Gremlin" is returning to "A.R." and it is to be hoped that his remarks in future issues will have the desired effect of clearing up some of the rotten signs and operation heard on the "Ham" bands, particularly 7 Mc. etc.

The letter of Don Knock (VK5NO) in the April issue is worthy of consideration by every Ham in V.E. Every evening one can hear nothing but bosham on this band (7 Mc.) and it is time something was done about it. I think if phone was prevalent on this band, and if the radio side of the regulations as suggested by VE2NO, a gentleman's agreement, plenty of good contacts could be made on c.w.

For those who must rag chew to their neighbours on phone and in addition put the V.E. and the family on why not set up 3.5 Mc. This band appears to be excellent for local QSOs, while the 3.5 Mc. band could also be used. As one who uses the 3.5 Mc. band regularly, I can state that 5 to 10 watts is sufficient for Interstate work. I have had a QRM on 3.5 Mc. with no effective adjustment of the filter with local power. Here is hoping for less QRM on 7 Mc. and more use being made of 50 and 3.5 Mc. bands.

Before I conclude may I make one suggestion for the Mag. and that is that it be of smaller size with more pages. The same size as the V.E.

—W. R. JARDINE, VK5PR.

## ZX2DA IS NOW G3DDN

15 Finsbury Ave., Lower Mitcham, S.A.

Editor, "A.R."—

The majority of VK Amateurs who were active on 28 Mc. during 1946-7 would, I think, have moved on to 20 Mc. with TBJ. ZX2DA has returned to England somewhat later and in a letter received from him he advises me that he has been demobilised from the R.A.F. and is now licensed as G3DDN. He is operating for the time being on c.w. only on frequencies of 14,020, 14,140, 14,260, 28,040, 29,240 and 29,340 Mc. He is very anxious to make contact with some of his VK friends, and has asked me to give all possible publicity to the above.

—I. THOMAS, VK5IT.

are to be screened. Unfortunately, time in this instance is too short for us to advise all members. This again reminds us of the benefits derived from meetings.

My knowledge of the individual doings are practically all owing to my visit to Hobart. However I have heard TJK on the air using his new calls T.J.L. and it certainly sounds as though Ray has given up the old TJK. TJK is the way house today so I'll have to make a call on Lee and see what's coming up. TJK was lucky enough to sing VK1AA while Ted was at Macquarie Island. I also QSOed Ted and when he gave me his location I was surprised to find that the shack had been moved. I'm afraid this constitutes the doings for this month, however if any member not mentioned will advise me as to when he is likely to have a battle in the cupboard, I will definitely arrange a personal contact so that said member may receive full publicity in due course.

## TEMPLATE FOR METER AND SOCKET HOLES

A handy template for setting up a circle cutter is suggested. Each time a hole is cut in prestressed or metal for mounting a large diameter part, such as a socket, meter or transformer, the circle removed from the material should be labelled and filed for future reference. A collection of metal and composition circles is thus soon obtained, from which one corresponding to the part to be mounted may be selected. In order to adjust the radius of the circle cutter, the circle is then slipped on the drill point of the cutter, and the tool is fitted to the edge of the circle and set. In this way, the time usually spent in setting up temporarily, and cutting trial holes is saved.—QST, June, 1938.

## "GREMLIN"

Letters in reference to "Gremlin" expressing their desire for his continuance have been received from W. Burford (VK1PB), J. Hartley, G. Cullinan (VK1C), D. J. Hartley (VK1CH), V. H. Wilson (VK2EW), P. H. Doherty (VK2AD), D. E. Knock (VK5NO), B. Ferguson (VK5PN).

## THE MAGAZINE

P.O. Box 187, Geraldton, W.A.

Editor, "A.R."—

Because I feel strongly about things I find myself, every now and again, sticking my neck out. And I feel an attack coming on right now.

First of all, the material and make-up of our Mag. looks as though it is not to be taken at times. Articles about "making every dispensible equipment and about new overseas developments, practical designs of antennae, etc., are just what the doctor ordered. Those who want the pages of mag., can go elsewhere to the Proc. of I.R.E., A.R.A., or the like. New things are on—they'll get more than they bargained for there!

There is nothing wrong about a man having radio for a hobby and for a living—but he should know where the borderline exists and endeavour to cross it. Amateur Radio for leisure, amateur Radio, Radio as a hobby, and amateur Radio as a profession. Radio as a teacher. Otherwise he will be selfless towards those for whom radio is only a hobby.

Was it a printer's error or did SRA actually mean that he went out to print a magazine? There should be c.w. (and m.e.) on 30—let's make a statement like that in print to reveal the sort of old-timer's mentality that gives the new ham a picture of some ferocious old belliger who even talks to his wife and kids (if any) in a fit of dander. Let's have more tolerance from both hams and ex-mos, particularly some of the latter genrty who earn their living at P.M.G. keys and can't forget it even when pursuing their (and our) hobby. There is no need for some of these pre-1930 and 1930-40s belligers (imagine themselves as aristocracy of hamming) from the following (mostly phone follies, of course) of youth.

Now, "Gremlin," this talk is so buoy wildelling his poison pen that I'm sure he never gets on. I'm sure that SRA should be given a chance. "Those who never make mistakes, never make anything." "Gremlin" wouldn't be game to go on the air for fear he made some "blue" such as those he writes about in others. However, my mate thinks where this chap is concerned is not that I dislike him, but that he is a good Ham Radio operator, but his anonymity. That's not cricket—not Ham Radio. We don't mind being criticised provided we know who's doing the crittisng.

—R. H. ATKINSON (VK6WZ)

## HARMONIC EMISSIONS

Wireless Branch, Treasury Gardens, Melbourne, G.3

Secretary, Vic. Div. W.I.A.

The Victorian Amateur Advisory Committee is composed of the chief harmonic emitters coming from Victorian amateur stations, which are being heard on the 14 and 28 Mc. Mc. bands in the metropolitan area, and it has been suggested that the institute might be good enough to arrange announcement in appropriate terms during its weekly broadcast to the members through station VK6WZ.

Such an announcement would assist the members of their obligations regarding harmonic emissions and might do much to assist conditions for other amateurs in neighbouring locations.

It would be greatly appreciated if you would arrange to take action as suggested and also perhaps to include a paragraph concerning this evil in the next issue of "Amateur Radio."

—L. PEARSON, Chairman,  
Vic. Amateur Advisory Committee

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Amateur Radio; May, 1948

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